

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claims 1-9 (canceled).

Claim 10 (new): A semiconductor device comprising:
a single crystal substrate primarily including zinc oxide and having a zinc-polar surface and an oxygen-polar surface; and
at least one layer of thin film primarily including zinc oxide disposed on the zinc-polar surface.

Claim 11 (new): The semiconductor device according to Claim 10, wherein the at least one layer of thin film has zinc-polarity.

Claim 12 (new): The semiconductor device according to Claim 10, wherein the at least one layer of thin film includes a multilayer film and the multilayer film defines a light-emitting layer.

Claim 13 (new): The semiconductor device according to Claim 10, wherein the at least one layer of thin film includes a multilayer film and the multilayer film defines a switching portion.

Claim 14 (new): The semiconductor device according to Claim 12, wherein the multilayer film includes an n-type contact layer, an n-type clad layer, an active layer, a p-type clad layer and a p-type contact layer.

Claim 15 (new): The semiconductor device according to Claim 14, further comprising a transparent electrode disposed on the multilayer film.

Claim 16 (new): The semiconductor device according to Claim 15, wherein the transparent electrode is made of Indium Tin Oxide.

Claim 17 (new): The semiconductor device according to Claim 12, wherein the multilayer film includes an n-type contact layer, an n-type clad layer, an n-type light guide layer, an active layer, a p-type light guide layer, a p-type clad layer, a current limiting layer, and a p-type contact layer.

Claim 18 (new): The semiconductor device according to Claim 17, further comprising a p-side electrode disposed on the multilayer film.

Claim 19 (new): The semiconductor device according to Claim 18, wherein the p-side electrode includes a Ni film, an Al film, and a Au film.

Claim 20 (new): A method for manufacturing a semiconductor device, comprising the steps of:

determining whether a surface of a single crystal substrate primarily including zinc oxide is a zinc-polar surface or an oxygen-polar surface; and

forming at least one layer of thin film primarily including zinc oxide on the zinc-polar surface.

Claim 21 (new): The method for manufacturing a semiconductor device according to Claim 20, wherein the thin film has zinc-polarity.

Claim 22 (new): The method for manufacturing a semiconductor device according to Claim 20, further comprising the steps of:

providing a sputtering apparatus provided with a plasma generation chamber and a separate film formation chamber; and

performing sputtering treatment using the sputtering apparatus so as to form the thin film.

Claim 23 (new): The method for manufacturing a semiconductor device according to Claim 22, wherein the sputtering treatment is performed by a method selected from the group consisting of an electron cyclotron resonance plasma sputtering method, an inductively coupled plasma sputtering method, a helicon wave excited plasma sputtering method, an ion beam sputtering method, and a cluster beam sputtering method.

Claim 24 (new): The method for manufacturing a semiconductor device according to Claim 20, wherein the thin film is formed by a method selected from the group consisting of a molecular-beam epitaxy method, a metal organic chemical vapor deposition method, a laser molecular-beam epitaxy method, and a laser abrasion method.

Claim 25 (new): The method for manufacturing a semiconductor device according to Claim 20, wherein the at least one layer of thin film is formed to include a multilayer film and the multilayer film defines a light-emitting layer.

Claim 26 (new): The method for manufacturing a semiconductor device according to Claim 20, wherein the at least one layer of thin film is formed to include a multilayer film and the multilayer film defines a switching portion.

Claim 27 (new): The method for manufacturing a semiconductor device according to Claim 25, wherein the multilayer film is formed to include an n-type contact layer, an n-type clad layer, an active layer, a p-type clad layer and a p-type contact layer.

Claim 28 (new): The method for manufacturing a semiconductor device according to Claim 25, wherein the multilayer film is formed to include an n-type contact layer, an n-type clad layer, an n-type light guide layer, an active layer, a p-type light guide layer, a p-type clad layer, a current limiting layer, and a p-type contact layer.